Software User's Guide

MPL031 Series
User's Guide

Rev 1.1

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1.0 Supported Video & Audio CODEC

DSP include hardware and software. User can use the system without additional software installation procedure.

1.1 Supported Video & Audio CODEC

Video			
CODEC	Resolution	Feature	File Container
MPEG1	Support		DAT, M1V
MPEG2	Up to 1920x1080p30, 1920x1080i30, 1280x720p60	MP@HL	MPG, MPEG, VOB, M2T, M2P, M2V, TS, TRP, TP
MPEG-4.2	Up to 1920x1080p30, 1920x1080i30, 1280x720p60	ASP@L5	AVI, DIVX, M4P
MPEG-4.10(H.264)	Up to 720x480p30, 720x576p25	BP@L3	MP4, MOV
	Up to 1920x1080p30, 1920x1080i30, 1280x720p60	MP@L4.0, HP@L4.0	
WMV9	Up to 1280x720p60, 1920x1080p30	MP@ML	WMV, ASF
	Up to 1280x720p60, 1920x1080p30	MP@HL	
SMPTE 421M(VC-1)	Up to 1920x1080p30, 1920x1080i30, 1280x720p60	AP@L3	

Common source program resolutions and frame refresh rates.
480,544 and 640x480i@25,29.97 and 30Hz
480,544 and 640x480p@23.976, 24, 29.97, 30, 59.94 and 60Hz
704 and 720x480i@29.97 and 30Hz
704 and 720x480p@23.976, 24, 29.97, 30, 59.97 and 60Hz
704 and 720x576i@25Hz
704 and 720x576p@23.976, 24, 25 and 50Hz
1280x720p@23.976, 24, 25, 29.97, 30, 50, 59.94 and 60Hz
960, 1280, 1440 and 1920x1080i@25, 29.97 and 30Hz
960, 1280, 1440 and 1920x1080p@23.976, 24, 25, 29.97 and 30Hz

Guide for Video Generation
The audio index must be locate on the front of 128K byte for MPEG1/MPEG2.
The audio index must be locate on the front of 64K byte for MPEG4/WMV.
Key frames of Video file must be present at least one always. Key frames must be made less than five seconds to prevent seamless of video.

Audio			
CODEC	Maximum bit rate	Maximum channels	Supported sampling frequencies (kHz)
MPEG-1 Layer I, II	I : 448kbps, II : 384kbps	2.0 (48kHz)	32, 44.1, 48
MPEG-1 Layer III	320kbps	2.0 (48kHz)	16, 22.05, 24, 32, 44.1, 48
MPEG-4 AAC-LC	384kbps	2.0 (96kHz)	8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48, 64, 88.2, 96
MPEG-4 HE-AAC (aacPlus)	384kbps	-	8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48
MPEG-4 BSAC	64kbps	2.0 (48kHz)	8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48
Dolby Digital (Need License)	640kbps	-	32, 44.1, 48
Dolby Digital Plus (Need License)	4.736Mbps	-	32, 44.1, 48
Dolby TrueHD (Need License)	18Mbps	2.0 (192kHz)	48, 96, 192
Dolby ProLogic Iix (Need License)	-	2.0	32, 44.1, 48
LPCM	36.864Mbps	-	32, 44.1, 48, 88.2, 96, 192
WMA9	192kbps(CBR), 384kbps(VBR)	2.0 (96kHz)	8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48, 96
WMA9 Pro	768kbps	-	32, 44.1, 48
ATRAC3	768kbps	2.0 (48kHz)	44.1, 48

Photo			
CODEC	Resolution	Feature	File Container
JPEG	4096x4096 or less		JPG
PNG	4096x4096 or less		PNG

Caution

Container of audio file must be.mp3

1.3 Operation Type

- Advertisement contents

  The contents and playlist must be stored on the internal SD memory card. The media contents and playlist can be update with network or USB memory stick.

  If DSP use with network then user can put media content and playlist to computer/server on the network, then DSP download automatically. If we use USB memory stick, then the contents can be copy to SD memory card by manually or automatically.

- Multiple operation mode
  - **Standby Mode**
    - ① Display black standby window.
    - ② Play the chosen video/photo by press button or motion detect.
    - ③ Display black standby window again.
  - **Menu Mode**
    - ① Play menu video/photo continuously.
    - ② Play the chosen video/photo by press button or motion detect.
    - ③ Play menu video/photo again.
  - **Repeat Mode**
    - ① Play all video/photo from start to end as circulation way.
    - ② Play the chosen video/photo by press button or motion detect.
    - ③ Play all video/photo again.
  - **Continuous Mode**

    Play selected video/photo continuously after receive a command from DCU when press button.

- Device Control Unit(DCU) BB24
  - Human Machine(DSP) interface
  - Interactive button style
  - Support motion detect sensor

1.3.4 Multiple synchronous display

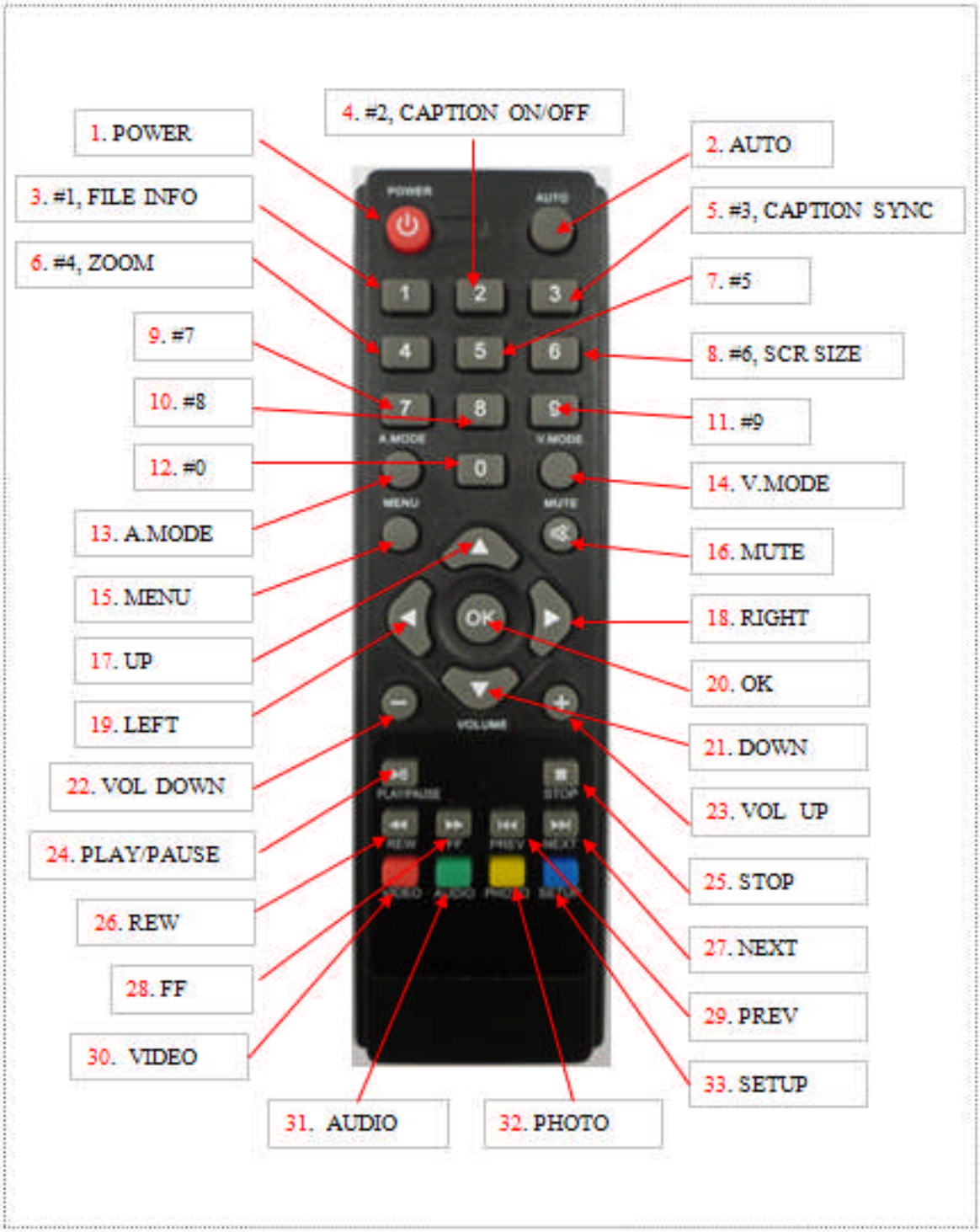
Create a unique wall of linked and synchronized displays. DSP synchronize using LAN or WiFi network connection.

This feature allow to create video walls, and design content that moves from screen to screen. The contents management and scheduling is identical with standard or network management type. This feature can be conjunction with interactive type too.

- Application

  Electrical wall, digital gallery, display synchronization and so on.

1.4 Remote Control



Item No	Button Name	Browser	Play Time
1	POWER	Power On/Off	Power On/Off
2	AUTO	N/A	N/A
3	#1, FILE INFO	1	N/A
4	#2, CAPTION ON/OFF	2	N/A
5	#3, CAPTION SYNC	3	N/A
6	#4, ZOOM	4	N/A
7	#5	5	N/A
8	#6, SCR SIZE	6	N/A
9	#7	7	N/A
10	#8	8	N/A
11	#9	9	N/A
12	#0	0	N/A
13	A.MODE	N/A	N/A
14	V.MODE	Switch video output	Switch video output
15	MENU	N/A	Go to the main menu
16	MUTE	N/A	Mute
17	UP	Up	N/A
18	RIGHT	Right	N/A
19	LEFT	Left	N/A
20	OK	OK	N/A
21	DOWN	Down	N/A
22	VOL DOWN	N/A	Volume Down
23	VOL UP	N/A	Volume Up
24	PLAY/PAUSE	N/A	N/A
25	STOP	N/A	N/A
26	REW	N/A	N/A
27	NEXT	N/A	N/A
28	FF	N/A	N/A
29	PREV	N/A	N/A
30	VIDEO	N/A	N/A
31	AUDIO	N/A	N/A
32	PHOTO	N/A	N/A
33	SETUP	N/A	N/A

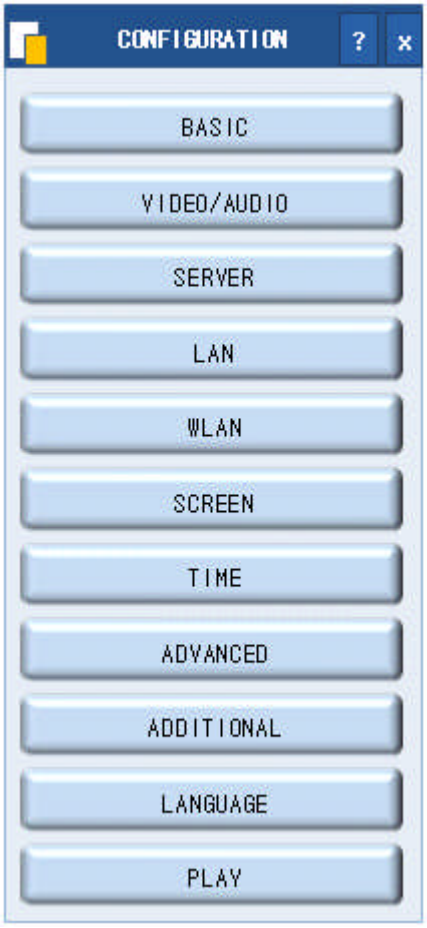
[Table] Remote Controller Button Function Table

The MENU button is used to move to the main menu.

The V.MODE button is used for toggle video output port. The video output is toggled VGA, DIGITAL A/V, S-Video and YPbPr order. User must configure video resolution after find video output port. **User must wait 3 second** at least to change new video output mode.

1.5 Manual Navigation Browser

After booting of systems is complete, DSP automatically plays content stored in the SD card. Depending on the configuration of a system, the content can be played manually. Main menu screen is shown below.



1. **BASIC**

   You can see the information about F/W version, operating mode and SD card status applied to the system. And you can update the contents and upgrade the F/W from this menu.

2. **VIDEO/AUDIO**

You can set the video and audio settings in this menu.

Set information about the brightness, contrast, saturation, and the output signal type, the output resolution in the video entry.

3. **SERVER**

In this menu, if manage the DSP remotely through a network, set the information required DSP connect to the server.

4. **LAN**

In this menu, if manage the DSP remotely through a LAN, set the required LAN information at the DSP.

5. WLAN

In this menu, if manage the DSP remotely through a WLAN, set the required WLAN information at the DSP.

6. SCREEN

From this menu, you can make settings for caption, photo and movie.

7. TIME

In this menu, you can set the time that is required to operate the DSP.

You can enter the current time and display on the screen.

8. ADVANCED

This menu is for advanced settings. You can operate the DSP according to the interactive type and multisync type through appropriate setting.

9. ADDITIONAL

In this menu, you can set to the input TV signal and scan the channels.

10. LANGUAGE

In this menu, you can select the language of the menu screen. Supported languages are Korean and English.

11. PLAY

When you click this button, you can get out of the menu screen. And content can be played automatically.

2. System Installation

Digital signage system with DSP will require display such as TV or monitor, networking and DCU as required.

2.1 Installation methods and procedures of DSP

DSP installation procedure is different for each different type.

2.1.1 Standard high quality advertise & information display

Standard type of operation infinite looping display with playlist or without playlist on the SD memory. The contents and playlist must be stored to SD memory card inside before play.

Installation Step

1. Connect video/audio cable to LCD monitor or TV.
2. Insert LAN cable to RJ45 as required.
3. Connect 12V DC power adapter.
4. DSP will start automatically after power up.
5. Setup display, audio, networking and network server information as required.
6. Update media contents.
    - If network is disabled, USB memory stick is used for contents update to inside SD memory card.
      Media contents on USB memory stick can be update automatically with command.txt file or update manually on setup menu by remote controller.
      Please refer to command.txt information detail.
7. Manually update :

After copying the content, Exit the menu screen using the remote control, DSP automatically play the content

- Automatically update : Automatically update : After copying the content, Remove the USB from the DSP, DSP automatically play the content.

  . DSP Manager support handling playlist, scheduling and multiple zone layout display.

2.1.2 Interactive control display

Interactive control feature make DSP to operate as interactivity straightforward without implement or provision any exotic software. Button, motion sensor and touch is possible device to control interactive display. Interactive display support menu mode, repeat mode, standby mode and continue mode display operation.

The interactive control use serial UART and network connection to communicate between DCU. The DCU is device control unit that including button and motion sensor.

Installation Step

1. Connect video/audio cable to LCD monitor or TV.
2. Insert LAN cable to RJ45.
3. Install DCU and connect to serial or network interface as required.
4. Connect 12V DC power adapter.
5. DSP will start automatically after power up.
6. Setup display, audio, networking and network server information as required.

- Please refer additional server installation guide for media server setup.
- DSP support dynamic and advanced DSP manager.

7. Update media contents.
    - Same way as standard operation type.
    - If network is disabled, USB memory stick is used for contents update to inside SD memory card.

      Media contents on USB memory stick can be update automatically with command.txt file or update manually on setup menu by remote controller.

      Please refer to command.txt information detail.

- If network is enabled, the media contents are update automatically from server to SD card.
- Dynamic DSP manager is recommend for intranet environment or USB memory stick. Advanced DSP manager is recommend for wide area internet connection.

8. Play the contents

- Manually update : After copying the content, Exit the menu screen using the remote control, DSP automatically play the content
- Automatically update : Automatically update : After copying the content, Remove the USB from the DSP, DSP automatically play the content.

File management of internal storage

The advertising content on internal SD memory can be update and managed by use of network or external USB memory. Please refer to 2.2.3 Handling remote command section.

2.1.4 Multiple synchronous display

Multiple synchronous display feature create a unique wall of linked and synchronized displays. DSP synchronize using LAN or WiFi network connection. Simple script assign one DSP unit as a“ Master”and the others as“ Slave”.

This feature can be conjunction with interactive type too.

2.2 Handling play list and remote command

2.2.1 Handling play list

DSP handling advertising contents by use playlist.txt file on root of storage device. Play list file list-up the all files to play at the station and time, week and week-time scheduling information.

(For details of Multi-Zone Layout Display, please refer to the MPL031_Series_Playlist_Manual)

2.2.2 Multi-Zone Layout Display(MLD)

DSP support free Multi-Zone Layout Display (MLD). User can display various style of screen layout with this free MLD function.

MLD requires two files, “format.txt” and “playlist.txt”. This two files must be stored in internal storage device or in the Internet server folder. A typical example of MLD is as follows.

(For details of Multi-Zone Layout Display, please refer to the MPL031_Series_Playlist_Manual)

2.2.3 Handling remote command

We can control DSP with remote command(command.txt). Remote command file can be locate on the Internet server or USB memory.

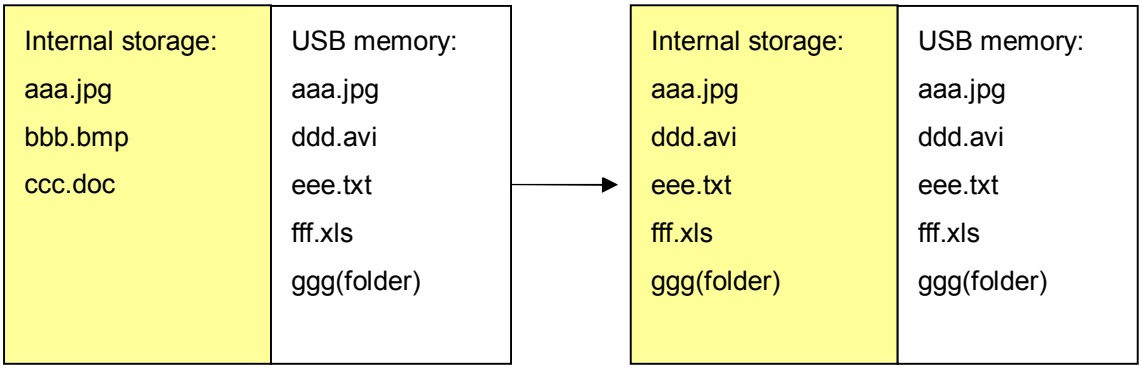
In case of Internet server, the command.txt file should be in the server root folder. In case of USB memory, the command.txt file should be in the root folder of USB memory.

Support Command

① “updateall”

It just works in case of USB memory.

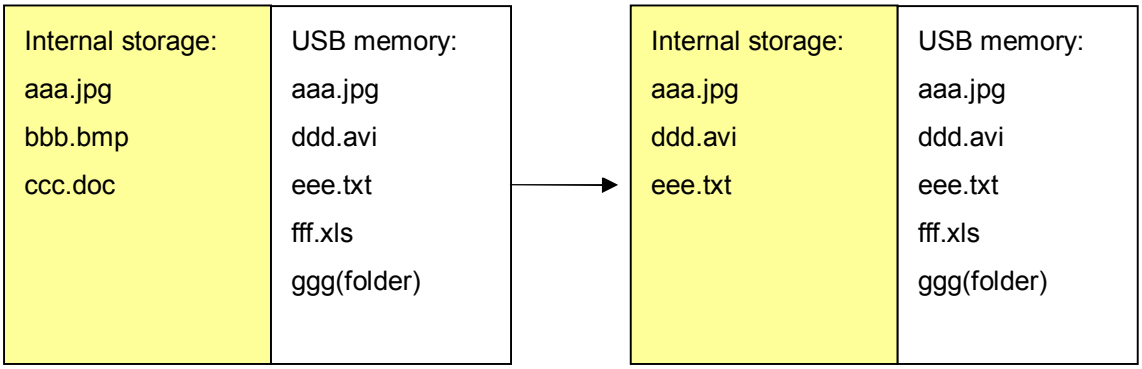
DSP deletes all files and folders in the internal storage, and copy all files and folder from USB memory to internal storage.



② “updatecontents”

It just works in case of USB memory.

DSP copy all contests files and text files from USB memory to the internal storage. If the file name and size is same, he don’t copy that file.



③ “upgrade <file name>”

- Action

DSP downloads {firmware image file name}, and upgrades firmware with this file. {firmware image file name} can be both relative path and absolute path. The system is restarted automatically after finishing upgrade.

- Example

a. upgrade DSSImage202001001_150.bin : DSP downloads DSSImage202001001_150.bin from Connection Folder, and upgrades firmware with this file.

b. upgrade /data/fwimage/DSSImage202001001_150.bin : DSP downloads DSSImage202001001_150.bin from /data/fwimage folder, and upgrades firmware with this file.

④ “format”

DSP formats SD memory to FAT32 file system.

⑤ “eraseall”

DSP erases all files in the SD memory.

⑥ “addfont1”, “addfont2”, “addfont2”

- Action

DSP downloads {user font file name}, and saves to SD memory. {user font file name} can be both relative path and absolute path. Because there are three commands (addfont1, addfont2, and addfont3), DSP can download maximum 3user font file. {user font file name} must be true type font, and the extension “.ttf”must be removed. User font can be selected in the “Screen->Caption->Font” and “Time->Time Display->Font”.

- Example

a. addfont1 Gulim : DSP downloads Gulim.ttf from Connection Folder, and saves to SD memory.

b. addfont2 /data/userfonts/Gulim : DSP downloads Gulim.ttf from /data/userfonts folder, and saves to SD memory.

Create command file

User can create remote command file by use text editor such as Notepad on Windows XP. The # mark at the first of line present a comment.

2.2.4 DSPCONFIG command

We can configure DSP with DSPCONFIG command (dspconfig.txt).

DSPCONFIG command file locate on the Internet server or internal storage.

In case of Internet server, the dspconfig.txt file should be in the server folder. In case of internal storage, the dspconfig.txt file should be in the root folder of internal storage.

Reference

Using DSPCONFIG command, we can setup DSP and use advanced functions such as configuration of off-day, on-day, log, live, multi-sync. Please refer to DSPCONFIG_MPL031_Series_Manual manual for more detail information.

3. System Configuration

User can configure the system at the Menu navigation browser(menu page). User can go to Menu page by press setup icon on the main navigation browser or press MENU button of remote controller.

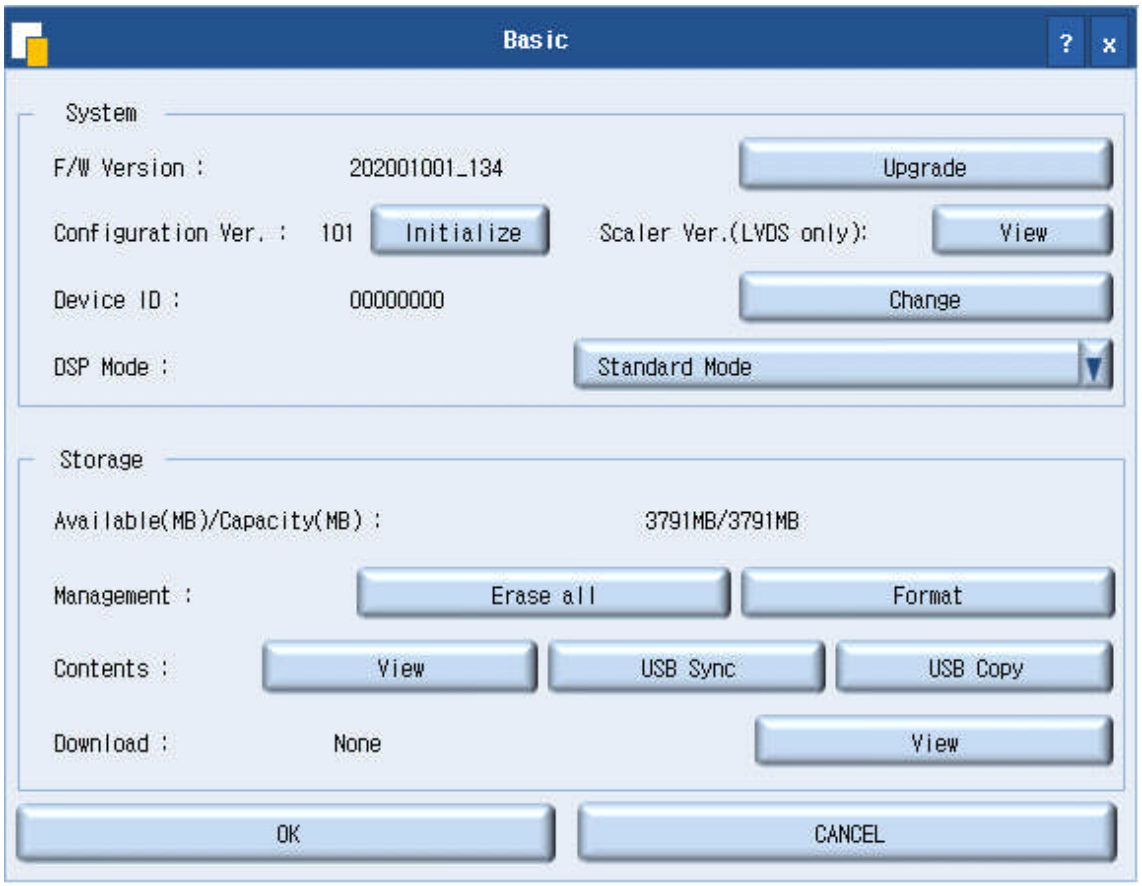
Please refer appendix A. for tree of setup page.

Caution

The response time after set the configuration can be late, because to store new configuration data to memory

3.1 BASIC

In this menu, You can see the information about F/W version, operating mode and SD card status applied to the system. And you can update the contents and upgrade the F/W.



3.1.1 F/W upgrade

DSP support software upgrade. User can upgrade the software with following steps.

1. Get the upgrade image “DSSImage” and copy this file to USB memory.
2. Insert USB memory to DSP and turn-on the system.
3. Apply power to the DSP.
4. Goto BASIC menu on menu page, and select F/W Upgrade
5. Select upgrade firmware.
6. Check the upgrade version, And Click the "YES" button.
7. Waiting for finish update, the update will takes around 10 minute.

System will restart automatically after upgrade and show main navigation windows or start play advertising contents.

> ***Caution***
>
> Don’t power off the system being software upgrade

3.1.2 Configuration Version

If click the "Initialize configuration" button, All setting values of the menu are initialized.

3.1.3 DSP Mode

There are 4 kinds of product type, standard type, interactive type, network managed type and multi-synchronous type in DSP.

After firmware version 2.42, Interactive type and Multi Synchronous type are merged to Standard type. Standby, Repeat, Menu, and Continue mode are operating modes of the Interactive type.

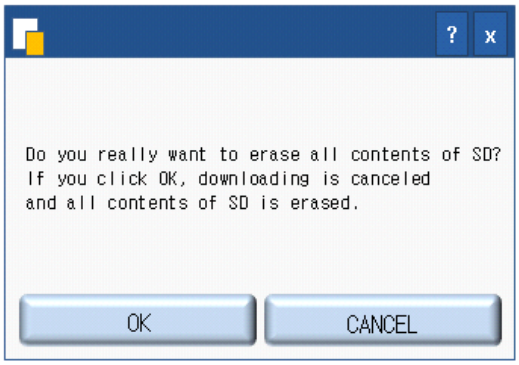
> ***Notice***
>
> If you want to use Multi Synchronous Type, refer to MPL031_Series_Multi_Synchronous_Manual.
>
> If you want to use Interactive Type, refer to Interactive_MPL031_Series_Manual.

3.1.4 Available/Capacity

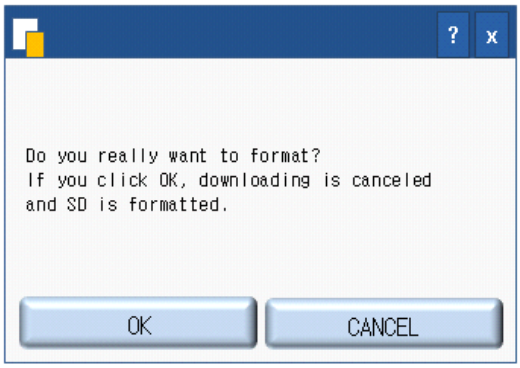
You can see the full capacity and available capacity of built-in the SD card.

3.1.5 Management

- Erase All : This menu deletes all files and folders from the internal storage.
- Format : This menu format the internet storage to the FAT32 file system.


Do you really want to erase all contents of SD?
If you click OK, downloading is canceled
and all contents of SD is erased.
OK
CANCEL

[Erase All]

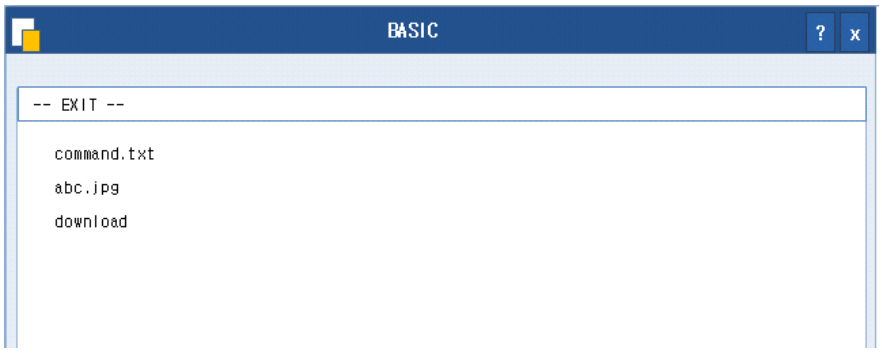


[Format]

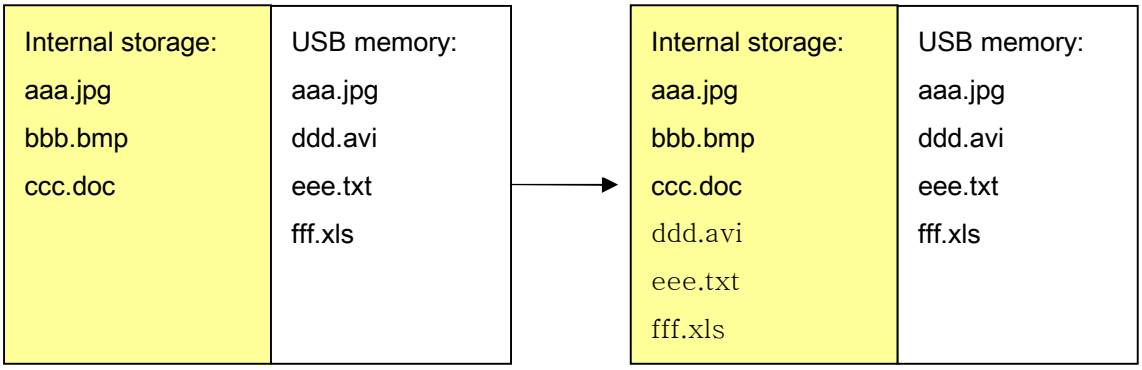
Format for the times will take about 10-20 minutes and depending on memory capacity.

3.1.6 Contents

- View : View the contents and files stored in the SD card.



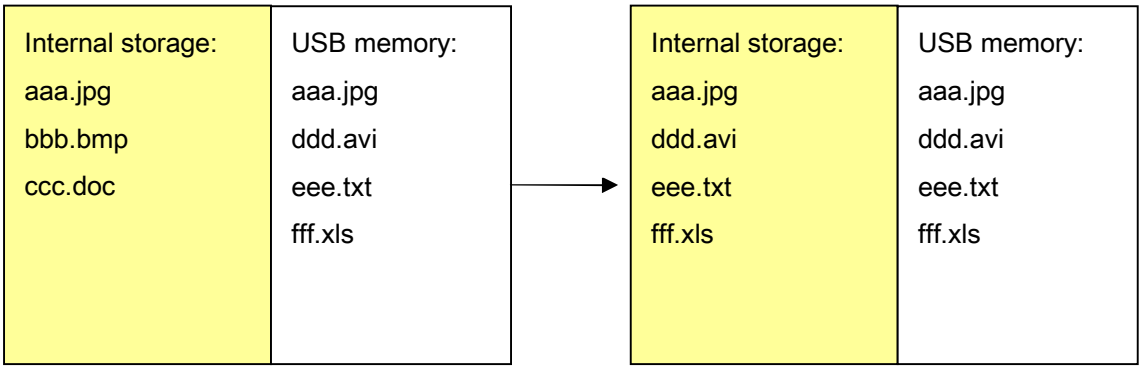
- Copy File: Copies files from USB memory (except command.txt and folders) to internal storage. If there is same file in the internal storage, doesn't copy that file.

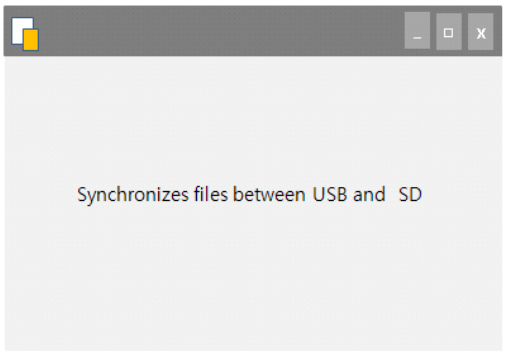


[Copies files from USB to SD card]

[Remove USB memory]

- Sync. File: Synchronizes files between USB memory and internal storage except command.txt and folders.



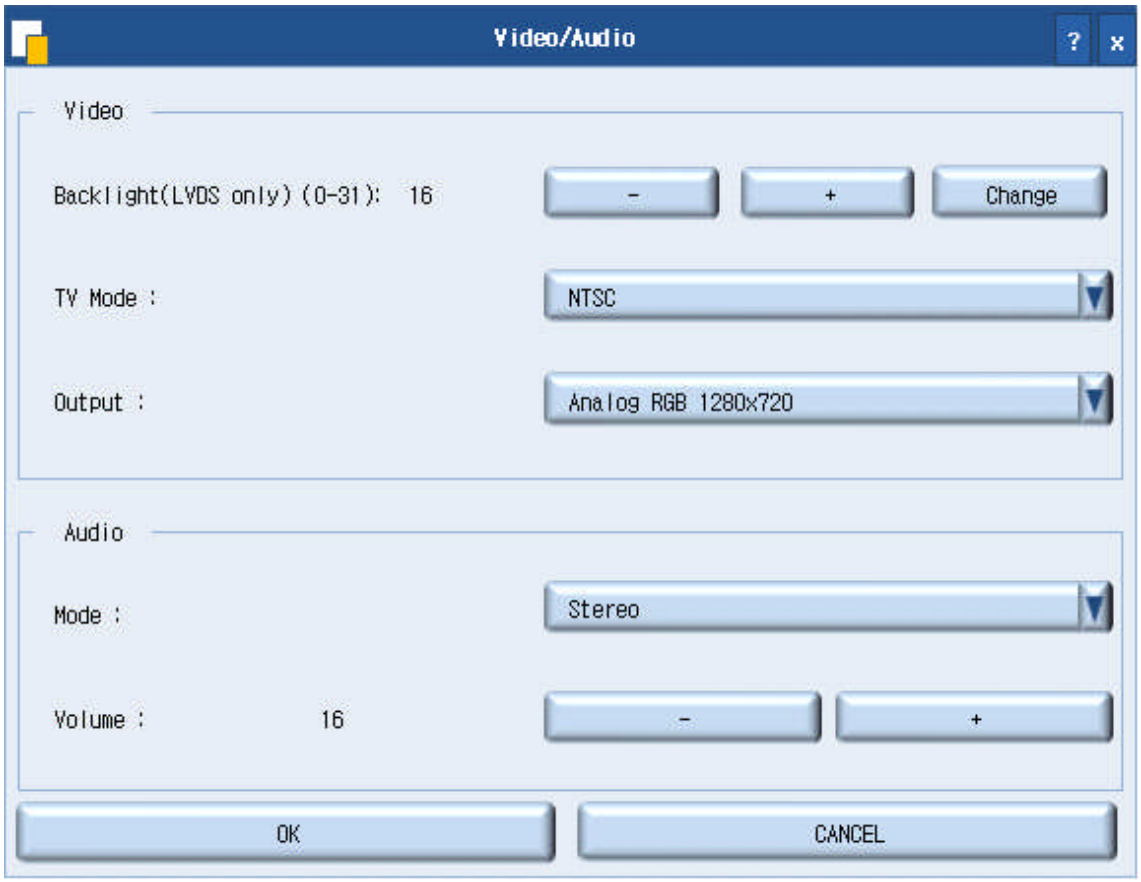


[Synchronizes files between USB and SD]

[Remove USB memory]

3.2 Video & Audio

The video and audio can be configured by select VIDEO/AUDIO menu. Following picture show the video and audio configuration window.



3.2.1 Video Configuration

User can configure brightness, contrast, saturation and video output port. Video output are depend on which video cable are you use. The video output can be configured as one of following items.

Possible video output port of DSP are followed..

- RGB : 640x480, 800x600, 1024x768, 1280x768, 1280x1024, 1366x768, 1400x1050, 1440x900, 1680x1050, 1920x1080
- DIGITAL A/V : 480p, 720p, 1080i, 1080p, 800x600, 1024x768, 1280x1024, 1366x768, 1400x1050, 1680x1050, 1920x1080
- DVI : 480p, 720p, 1080i, 1080p, 800x600, 1024x768, 1280x1024, 1366x768, 1400x1050, 1680x1050, 1920x1080

Default Setting

- Video output : DIGITAL A/V, 720p.

> ***Caution***
>
> DS5100 don't support DVI output by default.
>
> When you want to convert from DIGITAL A/V to DVI a video output using DIGITAL A/V to DVI cable, you may not get the DVI output. It is a compatibility problem between the monitor and cable.

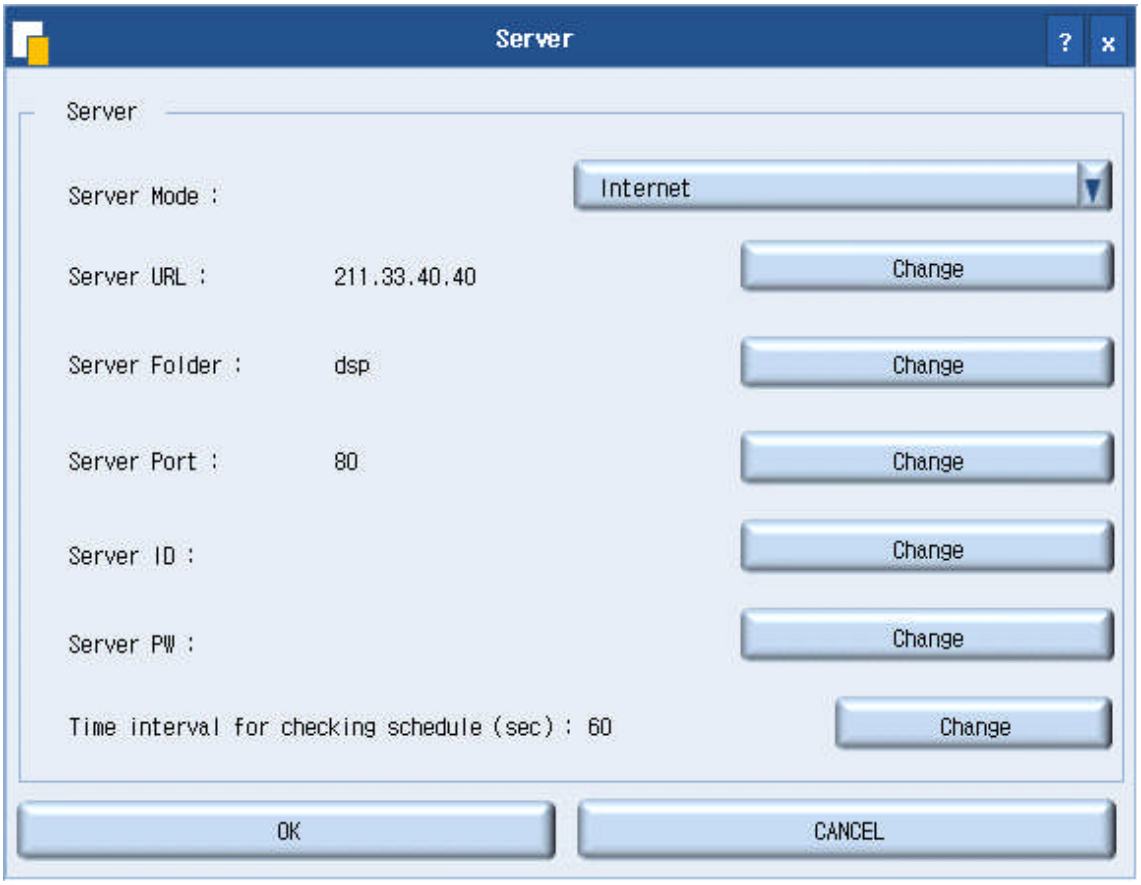
3.2.2 Audio Configuration

DSP supports stereo and surround output. Surround output means 5.2 channels optical or SPDIF interface. Default audio output is stereo.

3.3 Server

In this menu, if manage the DSP remotely through a network, set the information required DSP connect to the server.

Following picture show the server configuration window.



3.3.1 Server setting

If you use the DSP is managed remotely through a network, You must enter the information of server on the DSP.

- Server Mode
  - Standalone

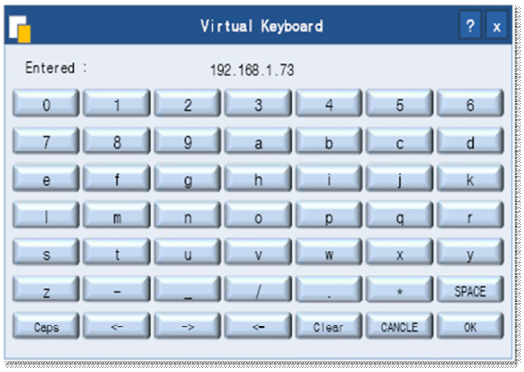
    This type is to operate DSP independently. If the F/W and content is being updated, uses the USB memory.

  - Internet

    DSP is managed to the server through the Internet.

■ Server URL

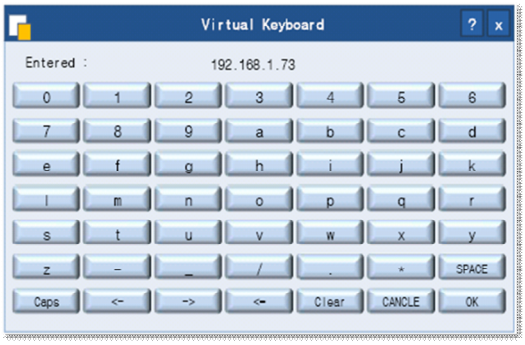
User must configure server IP address if use networking feature. User can change IP address by use following virtual keyboard.



[Figure] Virtual Keyboard for IP changes

■ Server Folder

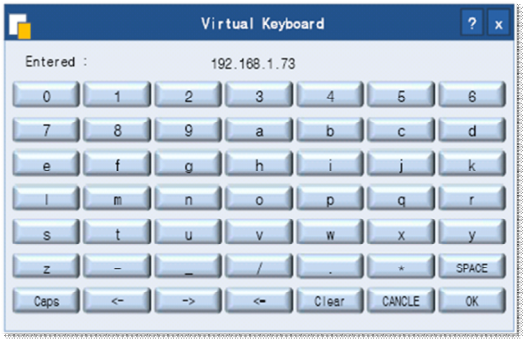
The folder name is used on internet server connection. User can change folder name by use virtual keyboard.



[Figure] Virtual Keyboard for change folder name, user ID and password

■ Server ID & Password

ID and Password is not used now. This is for future implantation.



[Figure] Virtual Keyboard for change folder name, user ID and password

- Server Port

  We need server port to connect to Internet server. We can change port number according to Internet server environment.

Default Setting

- Connect Mode : Standalone
- Server IP : 211.33.40.40
- Server Folder : dsp
- ID : none
- Password : none
- Server Port: 80
- Information of server update cycle (sec) : 60

3.3.2 Install Media server

The Media server can install as following steps.

1. Install Media server

   The media server installation is different in different management software. DSP support dynamic and advanced DSP management software. Please refer to each manual for more detail.

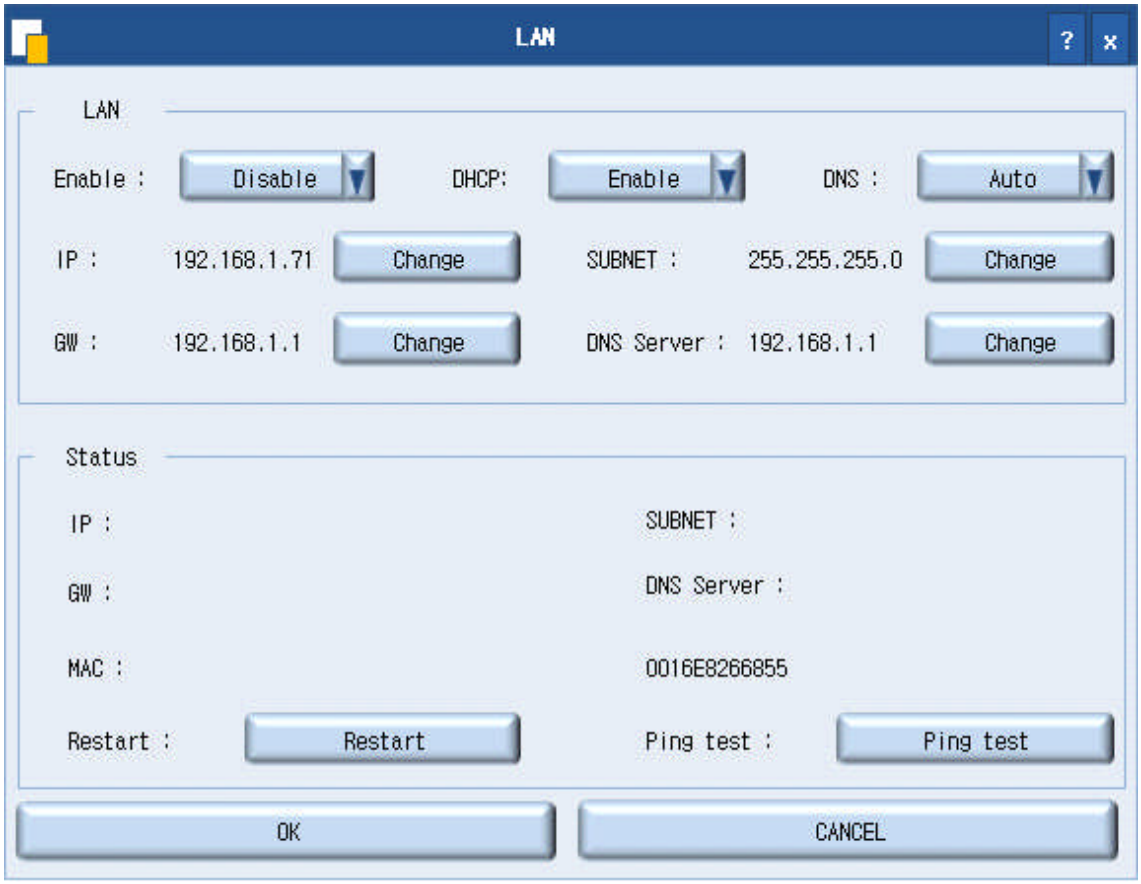
2. Setup the SERVER field on DSP
   - Connect Mode to Internet
   - Server IP to media server IP address
   - Server Folder to the name of shared folder
   - Server Port to media server port number
3. Restart system

   User will see following information while update advertising contents

Caution
Do not power off or plug out the SD memory card while update advertising contents

3.4 LAN

The wired network can be configured by select LAN menu. Following picture show the wired network configuration window.



- IP, SUBNET, Gateway, DNS Server

  DSP support dynamic and static IP configuration. If user configure to static IP configuration(Fixed), user must set IP address, subnet mask and gateway by virtual keyboard. Dynamic IP configuration(Auto) don't need any more configuration.

- Enable

  Whether use to LAN or not, setting for the LAN.

- DHCP

  LAN settings can be configured as dynamically(Auto) or statically(Fixed).

- DNS

  DNS server can be configured as dynamically(Auto) or statically(Fixed).

- PING Test

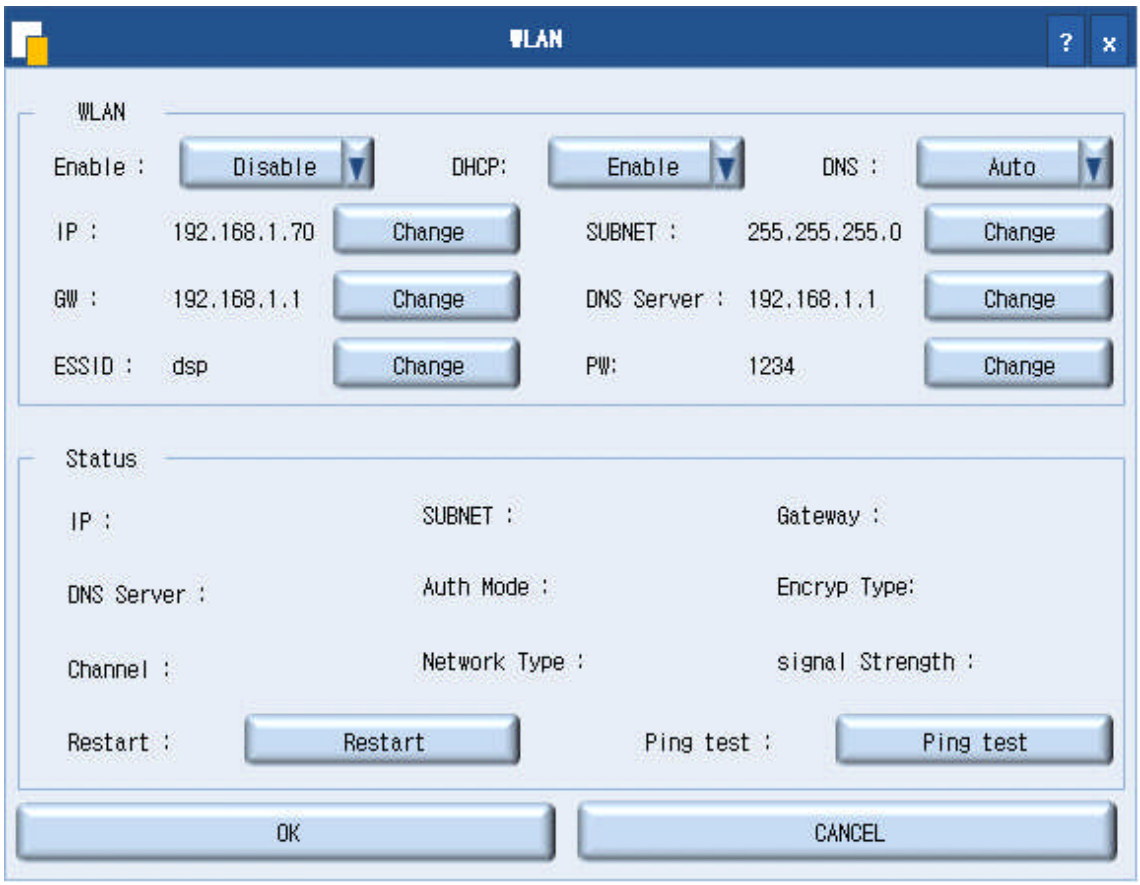
  User can test network connectivity by use simple PING tool.

Default Setting

- IP address assign : Auto
- DNS Server : Auto

3.5 WLAN (Option)

The wireless network can be configured by select WLAN menu. Following picture show the wireless network configuration window.



- IP, SUBNET, Gateway, DNS Server

  DSP support dynamic and static IP configuration. If user configure to static IP configuration(Fixed), user must set IP address, subnet mask and gateway by virtual keyboard. Dynamic IP configuration(Auto) don't need any more configuration.

- Enable

  Whether use to WLAN or not, setting for the WLAN.

- DHCP

  WLAN settings can be configured as dynamically(Auto) or statically(Fixed).

- DNS

  DNS server can be configured as dynamically(Auto) or statically(Fixed).

- ESSID

  Wireless network name.

- PW

  Password to access the Wireless network.

- PING Test

  User can test network connectivity by use simple PING tool.

- Wireless Access Setting

  User can set the various information to use a wireless LAN.

  - Network ID(ESSID) : Name of wireless LAN.
  - 암호 : If user are using a security key, user must specify.

Caution

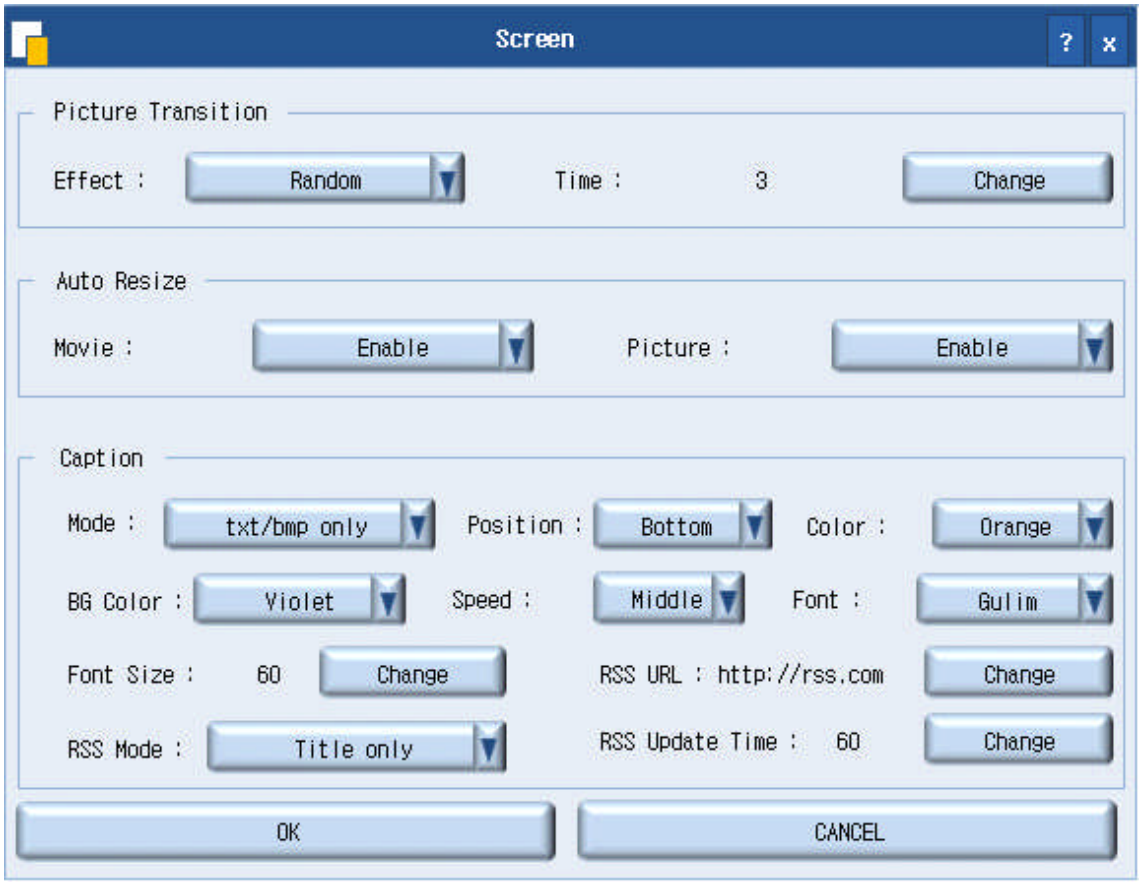
You must set the LAN to "Disable" to use a wireless LAN.

Default Setting

- Wireless LAN Support : disable
- IP address assign : Auto
- DNS Server : Auto

3.6 Screen Setting

On the Screen Setting menu user can configure system operating mode, slide effect and caption. Following picture shows screen setting window.



3.6.1 Picture Transition

Slide effect is configured at Slide Effect menu of Screen Setting on Setup page. DSP give slide effect Random, Crossfade, Rightward, Leftward, Upward, Increase and Decrease way. User can select slide effect Transition Time as second order too.

Default Setting

- Slide Effect : Random
- Transition Time : 3 second

3.6.2 Auto Resize

Auto scaling fits the photo/movie to video output resolution. If auto scaling is disabled, the actual video image ratio is displayed on the screen. If auto scaling is enabled, the video image is displayed on full screen. Auto scaling is enabled as a default.

The following shows some examples about the movie.

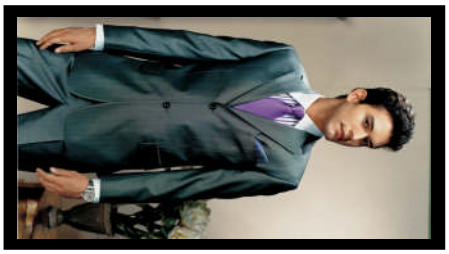
- Auto scaling : Enabled

4:3 photo/movie, 4:3 Resolution

16:9 photo/movie, 4:3 Resolution

4:3 photo/movie e, 16:9 Resolution

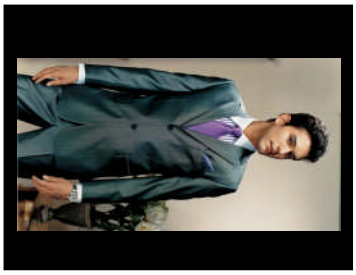
16:9 photo/movie, 16:9 Resolution



- Auto scaling : Disabled

4:3 photo/movie, 4:3 Resolution

16:9 photo/movie, 4:3 Resolution

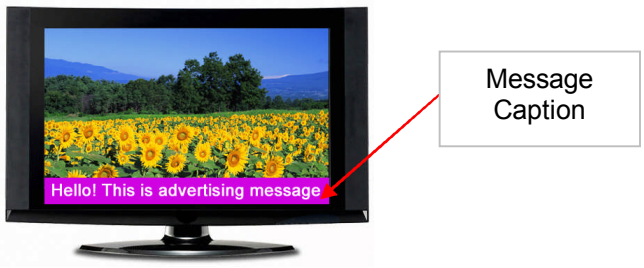


4:3 photo/movie, 16:9 Resolution

16:9 photo/movie, 16:9 Resolution

3.6.3 Message Caption

User can use message caption for immediate advertising and information display, following picture shows display windows with advertising message caption.



Message caption is enabled by select Caption to Enable on Screen menu. User must make message file prior to enable message caption.

User can control position, message color, background color and scroll speed of message caption menu.

- Position : top, bottom, Left side, right side
- Message Color : red, orange, yellow, green, blue, deep blue, violet, black and white
- Background Color : red, orange, yellow, green, blue, deep blue, violet, black and white
- Speed : quickly, normally, slowly
- Font : Gulim, Headline M, Myungjo
- Font Size : Font Size can be changed using the virtual keyboard.
- Caption Mode : txt/bmp only, RSS only, txt/bmp + RSS
- RSS Mode : Title only, Title + Description
- RSS URL : URL can be entered using the virtual keyboard.
- RSS Update Time : RSS Information, update on the cycle.

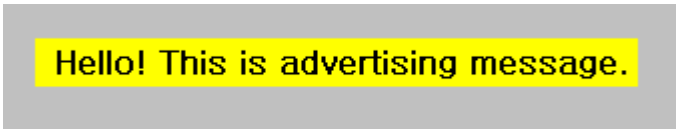
The default setting value is bottom position, block message color, white background color and normal scroll.

The message caption information can be controlled by playlist too.

Handling Message Caption File

Message caption file supports text format and BMP format.

In case of text format, the file name is message_xxxx.txt (for example, message_sunday.txt and message_0900.txt). It can be created by text editor, such as Notepad on Windows XP.



Notice

In case of text format, the maximum numbers of characters are 2048 characters.

In case of BMP format, the maximum numbers of pixels are 8192x128 pixels.

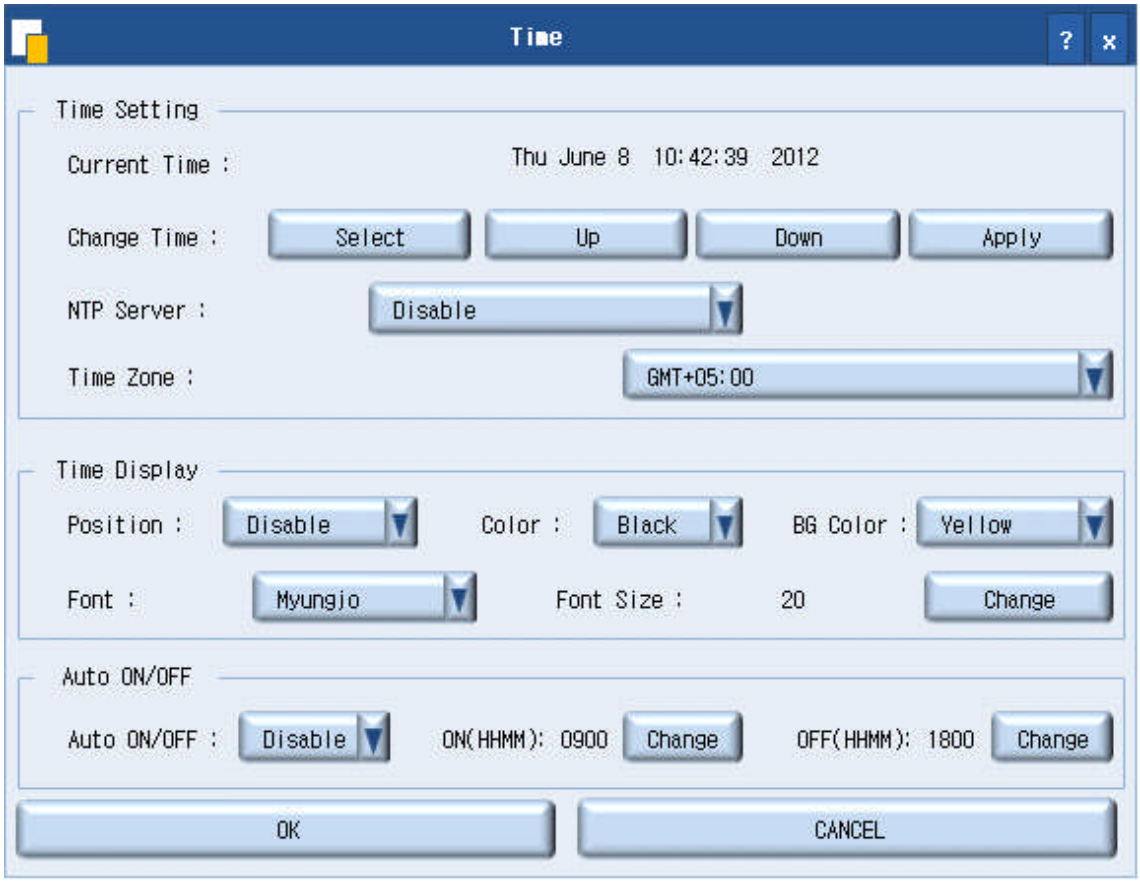
If you want to use message caption, you must add message caption file in the playlist.txt file.

Notice

The message caption can be create or modify by use of DSP management software.

3.7 Time

On the TIME menu user can configure current time, NTP server, time zone and system on/off time.



3.7.1 Current time

User can setup current time by manually or get it from NTP server. The time setting method will be selected with Cur. Time Setting menu.

3.7.2 Change Time

Select an item using the remote control. and change the time. After complete the time change, Click to the “Apply” button.

3.7.3 NTP server and Time Zone

If user configure time setting with NTP, network timing protocol, server to get current time, user must set NTP server and UTC. GMT is Universal Time Coordinated.

3.7.4 Time Display

DSP can display current time on the screen. User can select display location left-top, left-bottom, right-top or right-bottom.

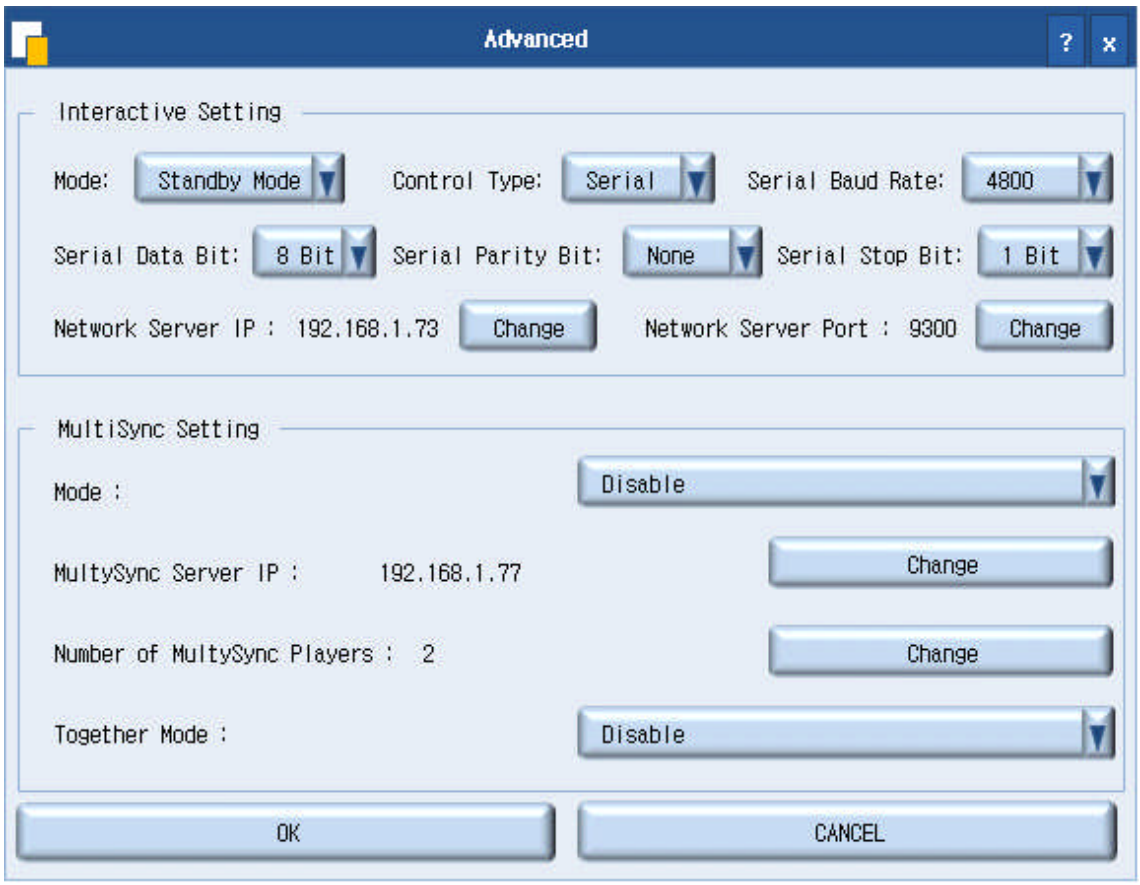
> ***Caution***
>
> Don't make overlap with message caption. If the time display and message is overlapped, the message can be broken.

3.7.5 Auto power on/off

User can enable or disable auto power on/off. User must set on time and off time prior to enable auto power on/off.

3.8 Advanced

In this menu, You can make settings for the Interactive and MultiSync.



3.8.1 Interactive setting

Interactive control feature make DSP to operate as interactivity straightforward without implement or provision any exotic software. Button, motion sensor and touch is possible device to control interactive display.

- Mode

  Interactive display support menu mode, repeat mode, standby mode and continue mode display operation.

  Refer to "Kiosk style interactive control display"of this manual.

- Control Type : Serial Type, Network Type.

  Refer to additional Interactive Type Manual.

- Baud Rate, Data Bit, Parity Bit, Stop Bit

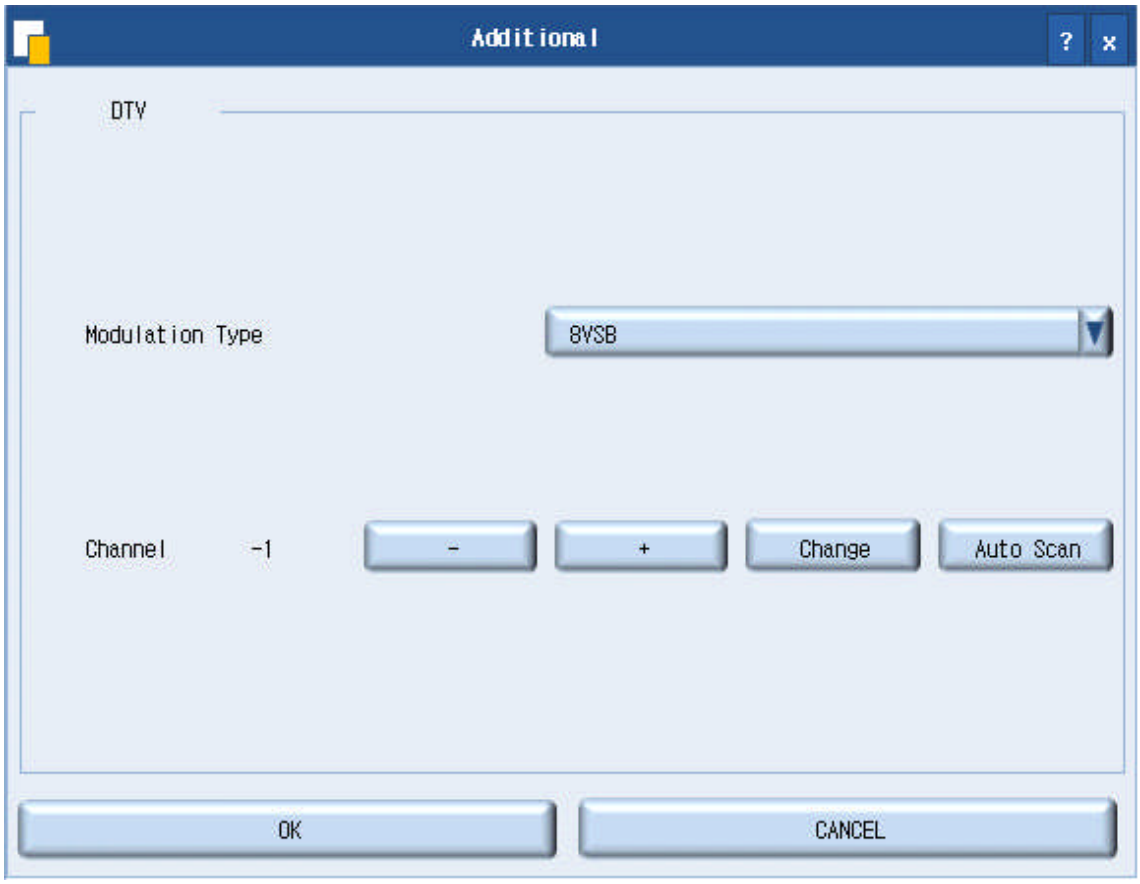
  This is the detailed settings for DSP that is used as Interactive type. Refer to additional Interactive_MPL031_Series_Manual.

3.8.2 MultiSync setting

Multiple synchronous display feature create a unique wall of linked and synchronized displays. DSP synchronize using LAN or WiFi network connection.

Refer to "2.1.4 Multiple synchronous display" of this manual. And refer to additional MPL031_Series_Multi_Synchronous_Manual.

3.9 Additional



- The Additional menu is available only for products with built-in DTV tuner.

- Modulation Type

  This is an item that you can select input TV signal type. There are two different types that one of two 8VSB, the other is USQAM. This approach is mainly used in the USA and Korea. If you will use in Japan, Southeast Asia and Europe, you cannot be used because of the different signal type.

- Channel

  If you decide the type of input signal, Press the "Auto Scan" button, channel scan should be. Once the channel scan is complete, the initial set value of the channel appears. Press the "-, +" button, You can change the channel. If you want to change channels on watching TV, You can change using the UP and Down button of remote control.

3.10 Language Setting

DSP support Korean and English. If you want to change the language, using the remote control, click the "Use" button.

Default setting is English.

Appendix. Trees of Menu Page

Lever1	Lever2	Lever3	Default
BSIC	F/W Version	Upgrade	
	Configuration Ver.	Initialize	101
	Scaler Ver.(LVDS only)	View	
	Device ID	Change	00000000
	DSP mode	Standard mode, Interactive mode	Standard mode
	Available(MB)/Capacity	3815MB/3815MB	
	Management	Erase all, Format	
	Contents	View, USB sync, USB copy	
	Download	View	None
VIDEO/AUDIO	Backlight(LVDS only)	“-”, “+”, Change	16
	TV mode	NTSC, PAL	NTSC
	Video Output : VGA	640x480, 800x600,1024x768, 1280x720, 1280x768, 1280x1024, 1360x768 1366x768, 1440x900, 1600x900, 1600x1200 1680x1050, 1920x1080	DIGITAL A/V 720p
	Video Output : DIGITAL A/V	480i_576i, 480p_576p, 720p 1080i, 1080p, 640x480, 800x600, 1024x768, 1280x720, 1280x768 1280x1024, 1360x768, 1366x768, 1440x900, 1600x900, 1600x1200 1680x1050, 1920x1200	
	Video Output : DVI	480i_576i, 480p_576p, 720p 1080i, 1080p, 640x480, 800x600, 1024x768, 1280x720, 1280x768 1280x1024, 1360x768,	

		1366x768, 1440x900, 1600x900, 1600x1200 1680x1050, 1920x1200	
	Audio mode	Stereo, Surround	Stereo
	Audio Volume	“-”, “+”	16
SERVER	Server Mode	Standalone, Internet	Standalone
	Server URL	Change	211.33.40.40
	Server Folder	Change	dsp
	Server Port	Change	80
	Server ID	Change	
	Server PW	Change	
	Time interval for checking schedule (sec)	Change	60

Lever1	Lever2	Lever3	Default
LAN	Enable	Enable, Disable	Enable
	DHCP	Enable, Disable	Enable
	DNS	Auto, Manual	Auto
	IP	Change	192.168.1.71
	SUBNET	Change	255.255.255.0
	GW	Change	192.168.1.1
	DNS server	Change	192.168.1.1
	Restart		
	PING test	GW, Server	
WLAN	Enable	Enable, Disable	Disable
	DHCP	Enable, Disable	Enable
	DNS	Auto, Manual	Auto
	IP	Change	192.168.1.71
	SUBNET	Change	255.255.255.0
	GW	Change	192.168.1.1
	ESSID	Change	dsp
	PW	Change	1234
	Restart		
	PING test	GW, Server	

SCREEN	Effect	Disable Random, Cross Fade, Rightward, Leftward, Upward, Downward, Increase	Random
	Time	Change	3
	Movie	Enable, Disable	Enable
	Picture	Enable, Disable	Enable
	Caption Mode	txt/BMP only, txt/BMP+RSS	txt/BMP only
	Caption Position	top, bottom, Left side, right side	bottom
	Caption Color	red, orange, yellow, green, blue, deep blue, violet, black and white	orange
	Caption BG Color	red, orange, yellow, green, blue, deep blue, violet, black and white	violet
	Caption Speed	quickly, normally, slowly	normally
	Caption Font	Dotum, Batang, User	Dotum
	Caption Font Size	Change	60
	RSS Mode	Description only, Title only, Title + Description	Title only
	RSS Update Time	Change	1800
	RSS URL	Change	http://rss.com

Lever1	Lever2	Lever3	Default
IME	Current Time		
	Change Time	Select, Up, Down, Apply	
	NTP Server	Disable, Manual, time.bora.net, time.kriss.re.kr, time.windows.com, time.apple.com	Disable
	Time Zone	GMT-12:00, GMT-11:00, GMT-10:00, GMT-09:00, GMT-08:00, GMT-07:00, GMT-06:00, GMT-05:00,	UTC +9

			GMT-04:00, GMT-03:00, GMT-03:00, GMT-01:00, GMT-02:00, GMT+00:00, GMT+01:00, GMT+02:00, GMT+03:00, GMT+04:00, GMT+05:00, GMT+06:00, GMT+07:00, GMT+08:00, GMT+09:00, GMT+10:00, GMT+11:00, GMT+12:00, GMT+13:00	
		Time display : Position	Disable, Top Left, Top Right, Bottom Left, Bottom Right	Disable
		Time display : Color	red, orange, yellow, green, blue, deep blue, violet, black and white	Black
		Time display : BG Color	red, orange, yellow, green, blue, deep blue, violet, black and white, transparency	Yellow
		Time display : Font	Dotum, Batang, User	Datum
		Time display : Font Size	Change	20
		Auto ON/OFF	Enable, Disable	Disable
		ON	Change	0900
		OFF	Change	1800
ADVANCED	Inter active	Mode	Standby mode, Repeat mode, Menu mode, Continue mode	Standby mode
		Control Type	Serial, Network	Serial
		Serial Baud Rate	4800, 9600, 19200, 38400, 115200	4800
		Serial Date Bit	5 Bit, 6 Bit, 7 Bit, 8 Bit	8 Bit
		Serial Parity Bit	None, Even, Odd	None
		Serial Stop Bit	1 Bit, 2 Bit	1 Bit
		Network Server IP	Change	192.168.1.73
		Network Server Port	Change	9300
		Mode	Enable, Disable	Disable

	Multi Sync	MultySync Server IP	Change	192.168.1.72
		Number of MultySync Players	Change	2
		Together Mode	Enable, Disable	Disable

Lever1	Lever2	Lever3	Default
ADDITIONAL	Modulation Type	8VSB, USQAM	8VSB
	Channel	“-”, “+”, Change, Auto Scan	14
	When there is no contents in SD, play default contents	Enable, Disable	Disable
Language	English	Apply	
	Korean	Apply	
	Japanese	Apply	

Probleme mit einem tbm Gerät?
Bitte kontaktieren Sie uns.

Wenn Sie technische Fragen an die Serviceabteilung von tbm haben, senden Sie eine E-Mail an service@tbmgmbh.de und machen bitte folgende Angaben zu Ihrem Gerät:

1. Modell Bezeichnung und Nummer:
2. Seriennummer:
3. Firmware Version:
4. Speichergröße und Fabrikat der Speicherkarte:
5. Eine Beschreibung des Problems:
6. Den Namen des Händlers oder der Internetadresse,
   wo Sie das Gerät erworben haben.

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